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# PATENT ABSTRACTS OF JAPAN

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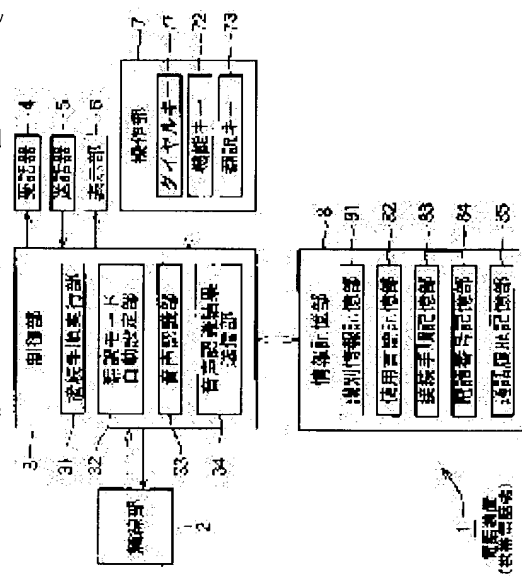
(72)Inventor : TAKATORI SUNAO  
KIYOMATSU HISANORI

## (54) TELEPHONE DEVICE AND TRANSLATION TELEPHONE DEVICE

(57)Abstract:

**PROBLEM TO BE SOLVED:** To facilitate operation when utilizing a translation telephone service and to improve recognition performance and translation accuracy by performing voice recognition where a talker is limited.

**SOLUTION:** When a translation key 73 for utilizing the translation telephone service is operated, a connection procedure execution section 31 reads connection procedures that have been registered at a connection procedure storage section 83 in advance, and performs the connection to the translation telephone device and the setting of a language to be used. A translation mode automatic setting section refers to the language used by one's party that has been preset to a telephone number storage section 84, and the utilization history of the translation telephone service that has been stored at a communication history storage section 85, thus automatically setting the utilization of the translation telephone service. When the translation telephone service is to be utilized, a voice recognition section 33 built into the telephone device 1 recognizes voice, and a voice recognition result transmission section 34 supplies character information (text data) that is a recognized result to the translation telephone device.



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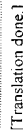
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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the block block diagram of the telephone equipment concerning this invention.

[Drawing 2] It is the block block diagram of other telephone equipments concerning this invention.

[Drawing 3] It is the block block diagram of the translation telephone equipment concerning this invention.

[Drawing 4] It is the block block diagram of the translation telephone equipment which others require for this invention.

[Drawing 5] It is drawing showing the use gestalt of a translation call service.

[Drawing 6] It is drawing showing other use gestalten of a translation call service.

[Description of Notations]

1 11,401,320,340,402 Telephone equipment

31 Handshaking Activation Section

32 Translation Mode Automatic Setting Section

33 Speech Recognition Section

34 Speech Recognition Result Transmitting Section

35 Identification Information Transmitting Section

73 Translation Key

81 Identification Information Storage Section

82 Language Storage Section Used

83 Handshaking Storage Section

84 Telephone Number Storage Section

85 Message Hysteresis Storage Section

100,200,350,403 Translation telephone equipment

110,210 Japanese-English translation equipment

111,121 Input change section

112,220 Japanese voice recognition unit

113 Japanese-English Machine Translation Equipment

114 English Voice Synthesizer

120,230 English-Japanese translation equipment

122,240 English voice synthesizer

123 English-Japanese Machine Translation Equipment

124 Japanese Voice Synthesizer

222,242 Voice dictionary Management Department

223,243 The voice dictionary section which constitutes the user voice data storage section

225a-225n Personal voice dictionary which constitutes the user voice data storage section

360 Network

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[Translation done.]

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the suitable telephone equipment for use of a translation (interpreter) call service, and the translation telephone equipment which offers a translation call service.

[0002]

[Description of the Prior Art] The technique of translating conversation by telephone (interpreter) is proposed variously as follows. The voice translation communication mode of the next configuration is indicated by JP,5-334353,A. Speech recognition of the Japanese voice is carried out with a Japanese voice recognition unit, it translates into English with Japanese-English translation equipment based on the contents of recognition, and Japanese is transmitted to an English side through a communication interface by the coding signal with the contents of a translation. In an English side, the contents are received through a communication interface, and while making English synthesized speech pronounce with an English voice synthesizer, the Japanese contents are displayed. In an English side, speech recognition of English which answered it and was pronounced is carried out with an English voice recognition unit, it translates into Japanese with English-Japanese translation equipment, and English is transmitted to a Japanese side through a communication interface by the coding signal with the contents of a translation. In a Japanese side, while pronouncing Japanese of a decodement with a Japanese voice synthesizer, English is displayed.

[0003] The cellular-phone system of the next configuration is indicated by JP,11-112665,A. A translation expert system, the fuzzy inference system which removes ambiguous language, a voice recognition system, and a speech synthesis system are carried in the satellite for international cellular phones, and speech recognition of the sound signal from the cellular phone of the place of dispatch or the distribution ground is carried out, and the recognized contents are changed into the language of a message place, and it synthesizes voice, and outputs to the cellular phone of the distribution ground or the place of dispatch.

[0004] The technique of enabling it to specify language used as JP,2000-206983,A automatically by transmitting the language information used currently beforehand recorded on the record medium (for example, SIM (Subscriber Identity Module) card) with which the personal digital assistant was equipped to an interpreter server (server which has the translation function which consists of a speech recognition function, a machine translation function, and a speech synthesis function) is indicated.

[0005]

[Problem(s) to be Solved by the Invention] In order to use a translation (interpreter) call service, it is necessary to send out the signal for connecting with the signal and translation telephone equipment (interpreter server) for requiring use of the service, or to send out the signal which specifies language, and actuation of the user of telephone equipment becomes complicated.

[0006] Moreover, the conventional translation (interpreter) call service is the configuration of performing speech recognition by the translation telephone equipment (interpreter server) side. For this reason, a voice recognition unit needs to perform speaker speech recognition non-limiting (unspecified speaker), and the recognition engine performance may fall rather than the speech recognition of speaker limitation.

[0007] It was made in order that this invention might solve such a technical problem, and it is registering beforehand handshaking at the time of using a translation (interpreter) call service into telephone equipment, and aims at offering the telephone equipment which simplified actuation at the time of using a translation (interpreter) call service. Moreover, this invention aims at offering the telephone equipment which enabled it to use a translation (interpreter) call service automatically.

[0008] Furthermore, this invention equips telephone equipment with a voice recognition unit, and aims at offering the telephone equipment which enabled it to perform speech recognition of speaker limitation by transmitting the result of having recognized and carried out speech recognition of the voice of the user of that telephone equipment with this voice recognition unit to translation telephone equipment (interpreter server). This invention is transmitting the identification information of the user (message person) of this telephone equipment to translation telephone equipment (translation server) from a telephone equipment side. Moreover, in a translation telephone equipment (translation server) side It aims at offering the telephone equipment which was made to perform speech recognition of speaker limitation based on the data (the voice description data etc.) concerning a message person's voice beforehand registered into translation telephone equipment (translation server).

[0009] Moreover, this invention aims at offering the translation telephone equipment which offers a translation call service based on the text, when not speech information but text is supplied. Furthermore, this invention is attaching and memorizing correspondence with the identification sign for specifying a user for the data about a user's voice, and aims at offering the translation telephone equipment which can perform speech recognition of speaker limitation.

[0010]

[Means for Solving the Problem] The telephone equipment applied to this invention in order to solve said technical problem It is telephone equipment applied to the translation telephone service system which translates into other language the voice by the language of inputted with the telephone equipment of the agency talking over the telephone through translation telephone equipment, and was made to carry out a voice output from the telephone equipment of a message place. A directions means to direct the translation

call-service mode by actuation of said translation telephone equipment, When translation call-service mode is set up by storage means by which the information about the connection method for translation telephone equipment is memorized, and said directions means, it is characterized by having the control means which aims at the connection to translation telephone equipment based on the storage information on this storage means.

[0011] And the language information which the user of the telephone equipment concerned uses for this account storage means, The language information which matches for every telephone number of a message partner, and the message partner concerned uses is memorized. Said directions means On condition that a message partner's telephone number is memorized by said storage means this time and a message partner's language information differs from a user's language information this time It is characterized by directing connection by the translation call-service mode between a message partner's language, and the language of the user of the telephone equipment concerned to said translation telephone equipment this time. Thereby, the telephone equipment concerning this invention is the thing which was prepared in the control unit and which operate an interpreter key etc., for example, and connection with translation telephone equipment (translation server) is made automatically.

[0012] In addition, when it sends to the message partner memorized by the storage means, a translation call service can be used automatically, there is arrival of the mail from the message partner memorized by the storage means, and when the telephone number of an origination side is supplied to the main station side, in case the arrival is answered, use of a translation call service can be set automatically. Furthermore, in case it telephones to the message partner who had used the translation call service in the past, use of a translation call service is set up automatically.

[0013] Moreover, the control means of the telephone equipment concerning this invention is characterized by to be characterized by to carry out speech recognition of the speech information by the language of I inputted, and to supply translation telephone equipment as text by the language concerned of I, to deal with the speech information inputted as speech information of a specified speaker, and to carry out speech recognition in the speech recognition, further, when translation call-service mode is set up by said directions means. Thereby, speech recognition of speaker limitation can be performed and the engine performance of speech recognition can be raised.

[0014] Moreover, the translation telephone equipment concerning this invention is translation telephone equipment applied to the translation telephone service system which translates into other language the voice by the language of I inputted with the telephone equipment of the agency talking over the telephone through translation telephone equipment, and was made to carry out a voice output from the telephone equipment of a message place. A speech recognition means to recognize the speech information by the language of I and to output as text by the language concerned of I, this -- with a machine translation means to change the text by the language of I into the text by other language the text by these other language -- being based -- being concerned -- others -- with a speech synthesis means to compound the speech information by language When the input from the telephone equipment of the agency talking over the telephone is speech information, while supplying the speech information concerned to said speech recognition means, when it is text, it is characterized by having the input change section which supplies the text concerned to said machine translation means. Thereby, when telephone equipment is equipped with the voice recognition unit, a translation call service can be offered based on the speech recognition result by the side of telephone equipment.

[0015] Moreover, the translation telephone equipment concerning this invention is translation telephone equipment applied to the translation telephone service system which translates into other language the voice by the language of I inputted with the telephone equipment of the agency talking over the telephone through translation telephone equipment, and was made to carry out a voice output from the telephone equipment of a message place. A speech recognition means to recognize the speech information by the language of I and to output as text by the language concerned of I, this -- with a machine translation means to change the text by the language of I into the text by other language the text by these other language -- being based -- being concerned -- others -- with the voice synthesizer which compounds the speech information by language While having a user voice data storage means to attach correspondence and to memorize the identification information for specifying a user, and the data about the voice of the user \*\*\*\* concerned, said speech recognition means It is characterized by performing speech recognition using the data about the corresponding voice memorized by said user voice data storage means based on the identification information supplied from telephone equipment on the occasion of a message.

[0016] Thereby, in a translation telephone equipment (translation server) side, it can become possible to perform speech recognition of speaker limitation based on the data (the voice description data etc.) concerning a message person's voice beforehand registered into translation telephone equipment (translation server), and the engine performance of speech recognition can be raised.

[0017]

[Embodiment of the Invention] Hereafter, the gestalt of suitable operation of this invention is explained to a detail, referring to an accompanying drawing. In addition, the gestalt of this operation explains a portable telephone as an example of telephone equipment.

[0018] Drawing 1 is the block block diagram of the telephone equipment (portable telephone) concerning this invention. Telephone equipment (portable telephone) 1 consists of the wireless section 2, a control section 3, an earphone 4, a telephone transmitter 5, a display 6, a control unit 7, and the information storage section 8. The wireless section 2 is equipped with a receive section, the transmitting section, the frequency synthesizer section, an antenna common machine, and the antenna section.

[0019] A control section 3 is realized by program control using a microcomputer system. This control section 3 is equipped with the various circuit sections in order to control each function of portable telephones, such as the sound signal processing section, the main control section, and the user interface section. Furthermore, this control section 3 is equipped with the handshaking activation section 31 the translation mode automatic setting section 32, the speech recognition section 33, and the speech recognition result transmitting section 34 in order to use a translation call service.

[0020] A control unit 7 is equipped with a dialing key 71, various kinds of function keys 72, and the translation key 73 for using a translation call service. The information storage section 8 is constituted using nonvolatile memory etc., and is equipped with the identification information storage section 81, the language storage section 82 used, the handshaking storage section 83, the telephone number storage section 84, and the message hysteresis storage section 85.

[0021] The identification information (ID information) for identifying the user of this portable telephone 1 is stored in the identification information storage section 81. generally, since it usually comes out to use it individually and a cellular phone has it, even if one of the identification information of this is stored in one portable telephone 1, it does not interfere. For this reason, this identification

information may be the thing of \*\*\*\* at a portable telephone 1.

[0022] The language information which the user of this portable telephone 1 uses is stored in the language storage section 82 used. Japanese shall be registered into the language storage section 82 used with the gestalt of this operation. In addition, if the language used is chosen from the registration menus which operate the registration key of a control unit 7 etc., start register mode, and are displayed on a display 6, since language, such as "Japanese", "English", and "German", will be displayed on a display 6, the language which the user of this portable telephone uses can be chosen from them, and language used can be registered by performing actuation for registration.

[0023] The procedure for specifying the procedure and the language used for connecting with translation telephone equipment (translation server) etc. is stored in the handshaking storage section 83. For example, the specific telephone number etc. is set up to the translation call service, and when specifying the language used by the side of this telephone equipment 1, and the language used of the message other party, respectively after dialing the specific telephone number and connecting with translation telephone equipment (translation server), the procedure about assignment of the telephone number of translation telephone equipment (translation server) and the language used is recorded on the handshaking storage section 83. Moreover, when the telephone number and a sub-address are set up for every language to translate, language, the telephone number, etc. to translate match and are memorized by the handshaking storage section 83.

[0024] A message partner's identifier, a name, etc. its telephone number, and the message partner's language used match, and are stored in the telephone number storage section 84. By choosing a telephone directory from the above-mentioned register modes, registration of a message partner's identifier, the telephone number, and the language used, modification, deletion, etc. can be performed. The existence of use of the telephone number of message time and a message partner or an identifier, and a translation call service, a message partner's language used, etc. match, and are stored in the message hysteresis storage section 85. In addition, message hysteresis is automatically generated by the control section 3.

[0025] Next, actuation of this telephone equipment (portable telephone) 1 is explained with the example of actuation. When using a translation call service, after pressing the translation key 73, the user of telephone equipment 1 uses a dialing key 71, and inputs a message partner's telephone number. If it recognizes that the use demand of a translation call service was advanced based on the translation key 73 having been operated, a control section 3 searches the telephone number storage section 84 and the message hysteresis storage section 85 based on a message partner's inputted telephone number, and if a message partner's language used is recorded, it will obtain the language used. As a result of searching the telephone number storage section 84 and the message hysteresis storage section 85 when a message partner's language used is not able to be obtained, a control section 3 displays the screen for making a message partner's language used input into a display 6, and demands the input of a message partner's language used from the user of telephone equipment 1.

[0026] A control section 3 will obtain the language used of the user of the telephone equipment 1 stored in the language storage section 82 used, if a message partner's language used is obtained by the alter operation by the above-mentioned retrieval result or the user of telephone equipment 1. A control section 3 will read handshaking to the translation telephone equipment (translation server) which can interpret those language in both directions from the handshaking storage section 83, if the language used of the user of telephone equipment 1 and a message partner's language used are acquired. For example, when the language used of the user of telephone equipment 1 is Japanese and a message partner's language used is English, a control section 3 reads handshaking to the translation telephone equipment (translation server) which offers Japanese-English bidirectional interpreter service from the handshaking storage section 83.

[0027] Next, a control section 3 is read through the handshaking activation section 31, and performs handshaking. For example, when the procedures at the time of using a translation call service are the service number which requires use of a translation call service, the information which specifies each language, and a procedure which carries out sequential transmission of a message partner's telephone number, the handshaking activation section 31 performs the procedure. Moreover, when the procedure at the time of using a translation call service is a procedure which performs a line connection to translation telephone equipment (translation server) first, and then sends out the telephone number of each language used and a message partner according to the demand from translation telephone equipment (translation server), the handshaking activation section 31 performs those procedures.

[0028] When sending to the message partner registered into the telephone number storage section 84, even if it does not operate the translation key 73, a translation call service can be used automatically. When the user of telephone equipment 1 does selection assignment of the message partner registered into the telephone number storage section 84, the translation mode automatic setting section 32 obtains a message partner's language used specified from the telephone number storage section 84. And the translation mode automatic setting section 32 judges whether it is necessary to use translation message service based on the language used of the user of telephone equipment 1 and a message partner's language used which are stored in the language storage section 62 used. The translation mode automatic setting section 32 judges it as the thing using a translation call service, when both language used differs, and it performs the procedure for using a translation call service through the handshaking activation section 31.

[0029] In addition, the translation mode automatic setting section 32 displays the message using a translation call service of a purport on a display 6, when both language used differs, when alter operation of the purport on which the user of telephone equipment 1 agrees with it is performed, connection with a translation call service is made, and when alter operation of the purport for which a user does not use a translation call service is performed, it may be made to carry out the usual dispatch.

[0030] When telephone equipment 1 has arrival of the mail, it is made to indicate that the control section 3 had arrival of the mail through the earphone 4 or the arrival-of-the-mail display which is not illustrated while displaying on the display 6 the telephone number of the dispatch origin supplied through the network. The translation mode automatic setting section 32 searches the telephone number storage section 84 and the message hysteresis storage section 85 based on the telephone number of a sending agency, and judges whether it is necessary to use a translation call service. The translation mode automatic setting section 32 sends out the signal of the purport using a translation call service, when it is judged based on having used the translation call service in the past from message hysteresis based on both language used differing that it is necessary to use a translation call service and the actuation for answering arrival of the mail is made by the user of this telephone equipment 1. In the network side which is not illustrated, when the signal of the purport which uses a translation call service from the telephone equipment 1 by the side of a call in is supplied, the incoming call is connected to this

telephone equipment 1 through translation telephone equipment (translation server).

[0031] In addition, that is displayed on a display 6, and when the purport on which the user of this telephone equipment 1 agrees with use of a translation call service is operated, you may make it supply the signal of the purport which uses a translation call service for a network side, when it is judged that the translation mode automatic setting section 32 needs to use a translation call service at the time of arrival of the mail.

[0032] In addition, when the information on the purport which is the arrival for which the incoming call used the translation call service through the network through translation telephone equipment (translation server) is supplied to this telephone equipment 1, you may make it display that a control section 3 is the arrival using a translation call service on a display 6.

[0033] Moreover, when an incoming call minds translation telephone equipment (translation server) and the signal of the purport which uses a translation call service from this telephone equipment 1 to a network side is sent out, a network side disregards the signal of the purport using the translation call service sent out from this telephone equipment 1.

[0034] If it will be in the condition that a message is possible through translation telephone equipment (translation server), while a control section 3 starts the speech recognition section 33 and the speech recognition result transmitting section 34, the signal of the other going-up circuit will notify that it is data to a network side from this telephone equipment 1 side at a network side.

[0035] With a telephone transmitter 5, the voice of the user of this telephone equipment 1 is changed into a sound signal, and is supplied to the speech recognition section 33 through low-frequency amplifier, an A/D converter, etc. which are not illustrated. The speech recognition section 33 is equipped with DSP, a speech recognition program, etc. This speech recognition section 33 recognizes the voice of the user of this telephone equipment 1, and changes and outputs the recognized contents to alphabetic data. The speech recognition result transmitting section 34 makes the alphabetic data outputted from the speech recognition section 33 transmit through the wireless section 2 based on the protocol for data communication set up beforehand.

[0036] In addition, this telephone equipment 1 is a cellular phone, and since it is generally used for individual treatment in many cases, the voice data storing section which stores the data about a specific speaker's voice is prepared in this speech recognition section 33. And the engine performance of speech recognition can be raised by using the data about the voice stored in this voice data storing section. Therefore, the speech recognition program of the speech recognition section 33 learns the description data of a speaker's voice, a parameter, etc., also combines the function made to memorize at any time as an auxiliary data for speech recognition, and has the learned contents in this voice data storing section.

[0037] Speech recognition of the contents about which the user of telephone equipment 1 spoke in Japanese is carried out in the speech recognition section 33, they are changed into alphabetic data, and are supplied to a translation telephone equipment (translation server) side through a network. In a translation telephone equipment (translation server) side, the synthesized speech of English which performed syntax analysis etc. based on the alphabetic data supplied from telephone equipment 1 by machine translation equipment, translated the Japanese contents into English, and was translated by the English voice synthesizer is generated, and a message partner is supplied. The contents about which the message partner spoke in English are translated into Japanese by translation telephone equipment (translation server), and the translated Japanese voice is supplied to this telephone equipment 1. Thereby, it can talk over the telephone through translation telephone equipment (translation server).

[0038] In order to set translation mode automatically, it is good also as the following configurations. The country-language storage section which recorded the country code and the official language of the country the account of correspondence \*\*\*\*\* is prepared in the information storage section 8. The translation mode automatic setting section 32 searches the above-mentioned country-language storage section based on the country code of the other party telephone number supplied from the network side at the time of the country code of the other party telephone number inputted by telephone equipment 1, or arrival, and obtains a message partner's official language. The translation mode automatic setting section 32 judges that it is necessary to use a translation call service, when the official language of the message partner who got based on the country code differs from the language used of the user of telephone equipment 1. And the translation mode automatic setting section 32 performs the procedure for using a translation call service through the handshaking activation section 31.

[0039] Drawing 2 is the block block diagram of other telephone equipments (portable telephone) concerning this invention. The telephone equipment (portable telephone) 11 shown in drawing 2 differs from the telephone equipment (portable telephone) 1 which the point equipped with the identification information transmitting section 35 in the control section 30 showed to drawing 1. This telephone equipment (portable telephone) 11 is not equipped with the speech recognition section. Therefore, in case a translation call service is used, speech recognition is performed by the translation telephone equipment (translation server) side. There are a thing for an unspecified speaker and a thing for a specified speaker in speech recognition. The recognition engine performance can be raised by performing speech recognition based on the description of the voice of a specified speaker.

[0040] If this telephone equipment 11 is connected to translation telephone equipment (translation server), the identification information transmitting section 35 will take out the identification information which identifies the user of this telephone equipment 11 beforehand registered into the identification information storage section 81, and will transmit the identification information to translation telephone equipment (translation server). Thereby, translation telephone equipment (translation server) can specify the user of telephone equipment 11 based on the identification information supplied from telephone equipment 11. And translation telephone equipment (translation server) can raise the engine performance of speech recognition by using the data about the user's voice, when the data about a user's voice specified based on identification information are stored in the voice data storing section by the side of translation telephone equipment (translation server). Moreover, the description of the user's voice is extracted, it can store in the voice data storing section, or the data about the voice stored in the voice data storing section based on the contents which learned and learned the description data of the user's voice, a parameter, etc. can be made to update.

[0041] Drawing 3 is the block block diagram of the translation telephone equipment (translation server) concerning this invention. Drawing 3 shows the translation telephone equipment (translation server) which translates Japanese and English in both directions (translation). This translation telephone equipment 100 consists of Japanese-English translation equipment 110 and English-Japanese translation equipment 120. Japanese-English translation equipment 110 consists of the input change section 111, the Japanese voice recognition unit 112, Japanese-English machine translation equipment 113, and an English voice synthesizer 114. English-Japanese



translation equipment 120 consists of the input change section 121, the English voice recognition unit 122, English-Japanese machine translation equipment 123, and a Japanese voice synthesizer 124.

[0042] The input change section 111 is equipped with the input decision section (not shown) which judges whether the signal (input signal) inputted into Japanese-English translation equipment 110 is speech information, or it is text. The input change section 111 supplies the speech information to the Japanese voice recognition unit 112, when an input signal is speech information, and it supplies the output signal of the Japanese voice recognition unit 112 to Japanese-English machine translation equipment 113. The input change section 111 supplies the text to Japanese-English machine translation equipment 113, when an input signal is text.

[0043] The Japanese voice recognition unit 112 outputs the contents which have recognized and recognized Japanese voice as Japanese text. The text of this Japanese is supplied to Japanese-English machine translation equipment 113. Japanese-English machine translation equipment 113 analyzes Japanese functor based on Japanese text, translates the Japanese contents into English, and outputs English text. English text is supplied to the English voice synthesizer 114. The English voice synthesizer 114 compounds and outputs English voice based on English text.

[0044] English-Japanese translation equipment 120 carries out speech recognition of the English voice input with the English voice recognition unit 122, outputs English text, translates English text into Japanese text with English-Japanese machine translation equipment 123, and makes Japanese voice utter with the Japanese voice synthesizer 124.

[0045] Drawing 4 is the block block diagram of other translation telephone equipments (translation server) concerning this invention. Drawing 4 shows the translation telephone equipment (translation server) which translates Japanese and English in both directions (translation). This translation telephone equipment 200 consists of Japanese-English translation equipment 210 and English-Japanese translation equipment 230.

[0046] Japanese-English translation equipment 210 consists of the Japanese voice recognition unit 220, Japanese-English machine translation equipment 113, and an English voice synthesizer 114. The Japanese voice recognition unit 220 consists of the Japanese speech recognition section 221, the voice dictionary Management Department 222, and the voice dictionary section 223. Here, the voice dictionary section 223 constitutes the user voice data storage section indicated to the claim. This voice dictionary section 223 is equipped with the voice dictionary 224 for unspecified speakers, and two or more personal voice dictionaries 225a-225n.

[0047] The voice dictionary Management Department 222 chooses the voice dictionary 224 for unspecified speakers, when identification information is not supplied. When identification information is not supplied, the Japanese speech recognition section 221 outputs the contents which have recognized by performing Japanese speech recognition using the voice dictionary 224 for unspecified speakers as Japanese text. The voice dictionary Management Department 222 confirms whether the personal voice dictionary corresponding to the identification information exists in the voice dictionary section 223, when identification information is supplied.

[0048] The voice dictionary Management Department 222 supplies the demand which extracts the description of Japanese voice to the Japanese speech recognition section 221 while choosing the voice dictionary 224 for unspecified speakers, when the personal voice dictionary corresponding to identification information does not exist (not registered). The Japanese speech recognition section 221 extracts the description data of the Japanese voice which is performing speech recognition, and supplies the extracted description data to the voice dictionary Management Department 222 while it performs speech recognition using the voice dictionary 224 for unspecified speakers. The voice dictionary Management Department 222 attaches correspondence with identification information, and registers into a personal voice dictionary the description data of the Japanese voice supplied from the Japanese speech recognition section 221 (a personal dictionary is newly drawn up).

[0049] The voice dictionary Management Department 222 supplies the demand which learns the description of Japanese voice to the Japanese speech recognition section 221 while choosing the personal voice dictionary corresponding to identification information, when the personal voice dictionary corresponding to identification information exists. The Japanese speech recognition section 221 learns the description of the Japanese voice which is performing speech recognition, and when it is necessary to add new voice data to a personal voice dictionary or and the already registered voice data needs to be changed, it supplies those voice data to the voice dictionary Management Department 222, while performing speech recognition using the personal voice dictionary corresponding to identification information. The voice dictionary Management Department 222 performs addition and renewal of a personal voice dictionary based on the voice data supplied from the Japanese speech recognition section 221.

[0050] Thus, since the Japanese voice recognition unit 220 operates as a voice recognition unit of a speaker restricted type and accumulates the description of a user's voice in the personal dictionary when identification information is supplied, it can raise the engine performance of speech recognition. The contents by which speech recognition was carried out with the Japanese voice recognition unit 220 are supplied to Japanese-English machine translation equipment 113 as Japanese text, it translates into English text with Japanese-English machine translation equipment 113, and English voice is uttered by the English voice synthesizer 114.

[0051] English-Japanese translation equipment 230 consists of the English voice recognition unit 240, English-Japanese machine translation equipment 123, and a Japanese voice synthesizer 124. The English voice recognition unit 240 consists of the English speech recognition section 241, the voice dictionary Management Department 242, and the voice dictionary section 243. The voice dictionary section 243 is equipped with the voice dictionary 244 for unspecified speakers, and two or more personal voice dictionaries 245a-245n. The English voice recognition unit 240 outputs the recognized contents which carried out [ voice / English ] speech recognition as English text. English-Japanese machine translation equipment 123 translates English text into Japanese text, and the Japanese voice synthesizer 124 compounds and outputs Japanese voice based on Japanese text.

[0052] Drawing 5 is drawing showing the use gestalt of a translation call service. Here, it is in the service area of one base station 310, and telephone equipment 320 and the telephone equipment 340 of another side in the service area of the base station 330 of another side show typically the gestalt which uses a translation call service through translation telephone equipment 350. A sign 360 is a network.

[0053] The exchange which controls a line connection connects the circuit of each telephone equipment 320,340 to translation telephone equipment 350 based on the translation call-service use demand sent out from the telephone equipment [ one of ] 320,340 side. The language which the user of one telephone equipment 320 speaks is Japanese, when the user of the telephone equipment 340 of another side speaks English, the going-up circuit of one telephone equipment 320 is connected to the input side of Japanese-English translation equipment 351, the telephone equipment 340 of another side gets down to the output side of Japanese-English translation equipment

351, and a circuit is connected. Thereby, the contents of Japanese in one telephone equipment 320 are changed into English voice by Japanese-English translation equipment 351, and are supplied to the telephone equipment 340 of another side by it. The going-up circuit of the telephone equipment 340 of another side is connected to the input side of English-Japanese translation equipment 352, one telephone equipment 320 gets down to the output side of English-Japanese translation equipment 352, and a circuit is connected. Thereby, the contents of English in the telephone equipment 340 of another side are changed into Japanese voice by English-Japanese translation equipment 352, and are supplied to one telephone equipment 320 by it.

[0054] The exchange or a control station etc. which controls a network 360 performs the line connection which minded translation telephone equipment 350 based on the translation call-service use demand supplied from a telephone equipment side at the time of the message initiation at the time of dispatch and an arrival-of-the-mail response etc. Moreover, each telephone equipment is in the condition of performing the usual message (translation telephone equipment 350 not being minded), and the above-mentioned exchange or a control station is changed into the line connection condition through translation telephone equipment 350 when a translation call-service use demand is transmitted from one of telephone equipments. Furthermore, the above-mentioned exchange or a control station is in the condition of offering the translation call service, and when the demand which suspends use of a translation call service from one of telephone equipments is transmitted, it changes a line connection so that it may be in the usual talk state (translation telephone equipment 350 is not minded). In addition, telephone equipment 320,340 is equipped with the voice recognition unit, and when transmitting a speech recognition result by text, a base station 310,330 and network 360 side sets up an uphill circuit so that data communication may become possible.

[0055] Drawing 6 is drawing showing other use gestalten of a translation call service. The 1st telephone equipment 401 equips coincidence with the so-called multi-call function to establish two or more communication links. The 1st telephone equipment 401 establishes the communication link with translation telephone equipment 403 while establishing the communication link with the 2nd telephone equipment 402, when using a translation call service. By the speech recognition section built in the telephone equipment 401, the 1st telephone equipment 401 changes voice into text data, and transmits it to translation telephone equipment 403. Translation telephone equipment 403 translates text data into the other party's language, and transmits the synthesized speech of other party language to the 1st telephone equipment 401. The 1st telephone equipment 401 transmits the synthesized speech (voice after a translation) of the other party language supplied from translation telephone equipment 403 to the 2nd telephone equipment 402. The 1st telephone equipment 401 supplies the voice transmitted from the 2nd telephone equipment 402 to translation telephone equipment 403, and obtains the translated voice. Although the portable telephone was illustrated as an example of telephone equipment with the gestalt of this operation, telephone equipment may be fixed telephone connected for example, to an ISDN network.

[0056]

[Effect of the Invention] Since it had the control means measure the connection to translation telephone equipment based on the storage information on this storage means when translation call-service mode was set up by the directions means direct the translation call-service mode by actuation of translation telephone equipment, the storage means of by which the information about the connection method for translation telephone equipment is memorized, and said directions means, the telephone equipment which applies to this invention as having explained above can use a translation call service by simple actuation.

[0057] The telephone equipment concerning this invention moreover, for a storage means The language information which the user of the telephone equipment concerned uses, and the language information which matches for every telephone number of a message partner, and the message partner concerned uses are memorized. Said directions means On condition that a message partner's telephone number is memorized by said storage means this time and a message partner's language information differs from a user's language information this time Since connection by the translation call-service mode between a message partner's language and the language of the user of the telephone equipment concerned is directed to said translation telephone equipment this time, not carrying out special actuation can also use a translation call service.

[0058] Moreover, the translation telephone equipment concerning this invention is translation telephone equipment applied to the translation telephone service system which translates into other language the voice by the language of I inputted with the telephone equipment of the agency talking over the telephone through translation telephone equipment, and was made to carry out a voice output from the telephone equipment of a message place. A speech recognition means to recognize the speech information by the language of I and to output as text by the language concerned of I, this -- with a machine translation means to change the text by the language of I into the text by other language the text by these other language -- being based -- being concerned -- others -- with a speech synthesis means to compound the speech information by language Since it had the input change section which supplies the text concerned to said machine translation means when it was text while supplying the speech information concerned to said speech recognition means, when the input from the telephone equipment of the agency talking over the telephone was speech information When telephone equipment is equipped with the voice recognition unit, a translation call service can be offered based on the speech recognition result by the side of telephone equipment.

[0059] Moreover, the translation telephone equipment concerning this invention is translation telephone equipment applied to the translation telephone service system which translates into other language the voice by the language of I inputted with the telephone equipment of the agency talking over the telephone through translation telephone equipment, and was made to carry out a voice output from the telephone equipment of a message place. A speech recognition means to recognize the speech information by the language of I and to output as text by the language concerned of I, this -- with a machine translation means to change the text by the language of I into the text by other language the text by these other language -- being based -- being concerned -- others -- with the voice synthesizer which compounds the speech information by language While having a user voice data storage means to attach correspondence and to memorize the identification information for specifying a user, and the data about the voice of the user \*\*\*\* concerned, said speech recognition means Since speech recognition is performed using the data about the corresponding voice memorized by said user voice data storage means based on the identification information supplied from telephone equipment on the occasion of a message It can become possible to perform speech recognition of speaker limitation, the engine performance of speech recognition can be raised by performing speech recognition of speaker limitation, and, thereby, the precision of a translation can be raised.

\* NOTICES \*

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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CLAIMS

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[Claim(s)]

[Claim 1] It is telephone equipment applied to the translation telephone service system which translates into other language the voice by the language of 1 inputted with the telephone equipment of the agency talking over the telephone through translation telephone equipment, and was made to carry out a voice output from the telephone equipment of a message place. A directions means to direct the translation call-service mode by actuation of said translation telephone equipment, It is telephone equipment characterized by to have the control means which aims at the connection to translation telephone equipment based on the storage information on this storage means when translation call-service mode is set up by storage means by which the information about the connection method for translation telephone equipment is memorized, and said directions means.

[Claim 2] The language information which the user of the telephone equipment concerned uses for said storage means, and the language information which matches for every telephone number of a message partner, and the message partner concerned uses are memorized. Said directions means On condition that a message partner's telephone number is memorized by said storage means this time and a message partner's language information differs from a user's language information this time Telephone equipment according to claim 1 characterized by directing connection by the translation call-service mode between a message partner's language, and the language of the user of the telephone equipment concerned to said translation telephone equipment this time.

[Claim 3] Said control means is telephone equipment according to claim 1 characterized by carrying out speech recognition of the speech information by the language of 1 inputted, and supplying translation telephone equipment as text by the language concerned of 1 when translation call-service mode is set up by said directions means.

[Claim 4] Telephone equipment according to claim 3 characterized by carrying out speech recognition of the speech information inputted as speech information by the specified speaker in the speech recognition by said control means.

[Claim 5] It is translation telephone equipment applied to the translation telephone service system which translates into other language the voice by the language of 1 inputted with the telephone equipment of the agency talking over the telephone through translation telephone equipment, and was made to carry out a voice output from the telephone equipment of a message place. A speech recognition means to recognize the speech information by the language of 1 and to output as text by the language concerned of 1, this -- with a machine translation means to change the text by the language of 1 into the text by other language the text by these other language -- being based -- being concerned -- others -- with a speech synthesis means to compound the speech information by language Translation telephone equipment characterized by having the input change section which supplies the text concerned to said machine translation means in being text while supplying the speech information concerned to said speech recognition means, when the input from the telephone equipment of the agency talking over the telephone is speech information.

[Claim 6] It is translation telephone equipment applied to the translation telephone service system which translates into other language the voice by the language of 1 inputted with the telephone equipment of the agency talking over the telephone through translation telephone equipment, and was made to carry out a voice output from the telephone equipment of a message place. A speech recognition means to recognize the speech information by the language of 1 and to output as text by the language concerned of 1, this -- with a machine translation means to change the text by the language of 1 into the text by other language the text by these other language -- being based -- being concerned -- others -- with the voice synthesizer which compounds the speech information by language While having a user voice data storage means to attach correspondence and to memorize the identification information for specifying a user, and the data about the voice of the user \*\*\*\* concerned, said speech recognition means Translation telephone equipment characterized by performing speech recognition using the data about the corresponding voice memorized by said user voice data storage means based on the identification information supplied from telephone equipment on the occasion of a message.

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[Translation done.]